

## ABSTRACT

It is the object of the present invention to feed cooling air suitable for cooling the high-temperature part of the gas turbine.

The present invention comprises a compressor, a combustor, and a turbine. Further, a turbine-cooling system to feed the gas from the compressor to the turbine is provided, and the turbine-cooling system comprises a heat exchanger to cool the gas compressed by the compressor, and a means for separating liquid from the gas cooled by the heat exchanger.

Thus, according to the present invention, it becomes possible to feed cooling air suitable for cooling the high-temperature part of the gas turbine and to achieve higher reliability of the gas turbine unit.